REMARKS

I. Introduction:

Claim 1 is amended and new claims 52 and 53 are added herein. Claims 38-41 have been withdrawn by consideration from the Examiner as being directed to a non-elected distinct invention. With entry of this amendment, claims 1-37 and 42-53 will be pending.

II. Restriction Requirement:

Applicants affirm the election of Group I (claims 1-37 and 42-51) without traverse.

III. Oath/Declaration:

In the Office Action dated December 3, 2001, the Examiner stated that the declaration is defective because non-initialed and/or non-dated alterations have been made to the oath or declaration. Applicants attach herewith a copy of the original declaration with alterations made to the post office address of inventor Howard Turner initialed and dated by Mr. Turner. (See Attachment A).

IV. Drawings:

The drawings are objected to because reference number (82) is not mentioned in the description. A Request for Amendment of Drawings is submitted herewith to remove reference number (82) from Figure 8. Formal drawings will be filed upon allowance of the application.

V. Specification:

The abstract has been amended as requested by the Examiner. More specifically, the first line of the abstract has been changed to: "An apparatus for use in parallel reaction of materials is disclosed."

The specification has also been amended to replace "choride" on page 11, line 11, with "chloride" as requested by the Examiner.

VI. Claim Rejections Under 35 U.S.C.§103(a):

Claims 1, 6, 7, 10-12, 16-18, 21-31, 33, 34, 37, 42-46, and 49-51 stand rejected under 35 U.S.C.§103(a) as being unpatentable over U.S. Patent No. 6,309,608 (Zhou et al.). The remaining claims stand rejected under 35 U.S.C.§103(a) as being unpatentable over Zhou et al. in view of additional patents discussed below.

Claim 1 has been amended to clarify that the reaction wells are formed in an upper surface of the base (wherein the base may be unitary or a composite) and that the base forms the closed lower ends of the wells. Claim 1 generally requires a base having a plurality of reaction wells formed therein, a cover configured for sealing engagement with the base to form a housing and define a common pressure chamber in communication with the reaction wells, and an inlet port in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the reaction wells. Each of the reaction wells has a closed lower end and an open upper end for receiving components for a reaction. The housing is configured to sustain a pressure substantially above atmospheric pressure.

The apparatus set forth in claim 1 is neither disclosed nor suggested by the prior art of record, including the Zhou et al. patent. Zhou et al. disclose multi-vessel reaction blocks designed to facilitate the semi-automated production of libraries of chemical compounds by combinatorial and parallel synthesis techniques. As shown in Fig. 1 of Zhou et al., the apparatus includes a reaction block 100 having 48 chambers formed by openings 110, baseplate 300, and cover plate 200. The reaction block 100 includes a top piece 130 and bottom piece 160. Openings 110 extend throughout the top piece 130 (Figs. 2A and 2B). The bottom piece 160 includes reaction vessel drain

holes 118 aligned with the reaction vessel openings 110 in the top piece 130 (Figs. 4A and 4B). O-ring seal grooves 312 are located where the drain holes 118 emerge from the underside of the bottom piece 160. The drain holes 118 are closed by a sliding seal 400 that is held in close proximity to the reaction block bottom piece 160 (Figs. 5A and 5D). When the seal plate 400 is in its vessel open position, seal plate through holes 420 are in alignment with reaction vessel drain holes 118 to allow fluid to drain from drain tubes 440 which protrude from the base of the sliding seal plate (Fig. 5A). As shown in Fig. 5D, when seal plate 400 is positioned in the vessel closed position, the seal plate through holes 420 are out of alignment with the reaction vessel drain holes. Leakage of fluid through gaps between the top surface of the sliding seal plate 400 and the bottom surface of the reaction block bottom piece 160 is prevented by 48 elastomeric o-ring seals 460 located in o-ring grooves 312.

Applicants' invention, as set forth claim 1, is particularly advantageous in that the reaction wells are all exposed to a common pressure chamber which results in simplification of the apparatus, reduced variation between pressurization of the reaction wells and reduced manufacturing and processing costs. Furthermore, the closed lower ends of the reaction wells formed by the base provide for a simple, cost effective design which allows for pressurization of the reaction wells with a pressurized gas at a pressure substantially above atmospheric pressure. Since sealing is required only for the common pressure chamber, the apparatus provides increased reliability and simplified maintenance. In contrast, the reactor vessel of Zhou et al. has a complex sealing arrangement that requires individual sealing for the lower open ends of each of the reactor vessels. The reaction block of Zhou et al. is configured such that the lower ends of the reaction wells can be opened during an experiment. The lower ends of the wells are therefore formed by a movable sealing plate rather than the base of the reaction block in which the reaction wells are formed.

Accordingly, claim 1 is submitted as patentable over Zhou et al. and the other prior art of reference.

Claims 2-30, depending either directly or indirectly from claim 1, are submitted to be allowable for the same reasons as claim 1.

Claims 3 and 4 are further submitted as nonobvious and patentable over Zhou et al. and WO 01/00315 A2 (Van Der Brink et al.). Van Der Brink et al. disclose an apparatus for performing physical or chemical operations. The apparatus includes an array of reactor vessels 1 positioned within a plate 3 having a plurality of openings 2 for receiving the reactor vessels. As shown in Figs. 1-7, the vessels are each self-contained and individually sealed. The plate 3 is simply a holding means to group the vessels together. Since there is no common pressure chamber or interaction between the reaction vessel chambers Van Der Brink et al. are not concerned with a pressure housing suitable to withstand high pressures. Therefore, the combination of Zhou et al. and Van Der Brink et al. do not show or suggest a housing enclosing a plurality of reaction wells, defining a common pressure chamber, and configured to sustain an operating pressure greater than 300 psig.

Claims 17-26 are further submitted as nonobvious and patentable because Zhou et al. do not show or suggest a flow restriction device positioned adjacent to open ends of the reaction wells to provide communication between the reaction wells and pressure chamber while reducing cross-talk between the reaction wells. Figs. 18A and 18B and the corresponding description (col. 16, line 36 – col. 17, line 42) of the Zhou et al. patent disclose a three-component cover plate assembly comprising a perforated cover plate top piece 920, septum sheet 940, and perforated cover plate bottom piece 960. Perforations within the top and bottom pieces are aligned with one another and the reaction vessels. The septum sheet simply allows the reaction vessels to be accessed with a syringe while being sealed off from the atmosphere. Recessed area 958 is provided on the underside of bottom piece 960 to permit purge gas as well as other gases and vapors to flow though the space above the reaction vessels (Fig. 18B, col.17, lines 37-42). Flow between the reaction vessels is therefore not restricted by the septum sheet. In discussing the rejection of claim 17, the Examiner also referred to col. 16, lines 8-12 of the Zhou et al. patent. This section of the patent

addresses the use of a septum (not shown) positioned to seal the top edges of the individual reaction vessels. The septum allows for access to individual reaction vessels via a syringe but does not permit communication between the reaction wells and a common pressure chamber.

With regard to the Examiner's rejection of claim 18, the septum sheet 940 includes a through-hole 942 aligned with purge gas holes 950 and 948 located in the cover plate top piece and bottom piece, respectively. The septum sheet does not include a plurality of vent holes aligned with the reaction wells.

As to the Examiner's rejection of claim 19, there is no suggestion to combine the teachings of Zhou et al. with U.S. Patent No. 4,000,492 (Willens) to produce the claimed invention. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. *In re Bond,* 15 U.S.P.Q.2d 1566, 1568 (Fed. Cir. 1990). Willens discloses a metal film system for use in laser micromachining of high resolution facsimile images and has no relation to the field of the Zhou et al. patent.

With regard to the Examiner's rejection of claims 21 and 23, Zhou et al. disclose that the septum sheet may be rubber. As discussed above, the septum sheet is not used as a flow restriction device. Furthermore, the septum sheet is not rigid or porous as required by claims 21 and 23, respectively.

In rejecting claim 25, the Examiner referred to transfer box 800 shown in Fig. 14 and described starting at col. 27, line 7. The transfer box 800 is configured to hold an array of wells, such as an array of glass vials for receiving compounds from the reaction block 100. The reaction block is placed on top of the transfer box assembly with the reaction vessel drain tubes positioned to enter the transfer box and flow into the wells located therein. The glass vials are not described as being located within the reaction block 100. Moreover, if glass vials were used in the reaction block 100, it would not be possible to open the reaction wells and drain or purge the contents, which is an important feature of the Zhou et al. design. Zhou et al. therefore do not

disclose a plurality of vials inserted into the reaction wells as required by claims 25, 26, and 29.

Claim 31 is directed at an apparatus for use in parallel synthesis of screening materials and generally includes a pressure chamber sized for receiving a microtiter plate having reaction wells with a closed lower end and an open upper end exposed to the pressure chamber, a cover movable between an open and closed position, an inlet port in communication with the pressure chamber for supplying fluid pressurized substantially above atmospheric pressure to the pressure chamber, and a quick-operating fastening device operable to position the cover in its closed position and hold the cover in sealing engagement with the pressure chamber.

The apparatus set forth in claim 31 is neither disclosed nor suggested by the prior art of record, including the Zhou et al. patent. Zhou et al. do not show or suggest a pressure chamber sized for receiving a microtiter plate. The pressure chamber of Zhou et al. is created by a small space 250 provided between the top surface of the reaction block 100 and the underside of the cover plate 200 to permit fluid communication within a gas and vapor space above the individual reaction chambers 110 (See Figs. 1 and 8B). There is no pressure chamber sized for receiving a microtiter plate. Furthermore, Zhou et al. disclose screw or bolt-type fasteners for clamping the reaction block assembly together and do not show or suggest a quick-operating fastening device that allows for quick and easy opening and closing of the vessel without the need to loosen or tighten bolts or other attachment means.

Accordingly, claim 31 is submitted as patentable over Zhou et al. and the other prior art of record.

Claims 32-37, depending either directly or indirectly from claim 31, are submitted as patentable for the same reasons as claim 31.

Claim 32 is further submitted as patentable over Zhou et al. and U.S. Patent Nos. 4,180,943 (Smith et al.) and U.S. Patent No. 6,250,707 (Dintner et al.) because there is no teaching or suggestion in the cited patents to combine Zhou et al. with Smith et al. or Dintner et al. to produce the claimed invention.

Claims 33, 34, 35, and 37 are further submitted as patentable for the reasons discussed above with respect to claims 17, 18, 19 and 25, respectively.

Claim 42 is directed at an apparatus for use in parallel reaction of materials and generally includes a base having a plurality of reaction wells with closed lower ends and open upper ends, a cover configured for sealing engagement with the base to form a housing defining a common pressure chamber in communication with the reaction wells, a flow restriction device positioned adjacent top the open ends of the reaction wells to provide communication between the reaction wells and pressure chamber while reducing cross-talk between the reaction wells, and an inlet port in communication with the pressure chamber. Claim 42 is submitted as patentable for the reasons discussed above with respect to claim 17.

Claims 43-51, depending either directly or indirectly from claim 42, are submitted as patentable for the same reasons as claim 42.

Claims 43, 45, 46, 47, and 49 are further submitted as patentable for the reasons discussed above with respect to claims 21, 23, 18, 19, and 25, respectively.

New claim 52 is directed at an apparatus for use in parallel reaction of materials and generally includes requires a base having a plurality of reaction wells formed therein, a cover configured for sealing engagement with the base to form a housing and define a common pressure chamber in communication with the reaction wells, and an inlet port in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the reaction wells. Each of the reaction wells has a permanently closed lower end and an open upper end for receiving components for a reaction. The housing is configured to sustain a pressure above 40 psig.

As previously described, the reaction vessel of Zhou et al. includes reaction wells having open ends that can be temporarily sealed. Due to the open end reaction well design, Zhou et al. would be particularly problematic at higher operating pressures and not sustain pressures above 40 psig for significant periods of time.

Accordingly, new claim 52 is submitted as nonobvious and patentable over Zhou et al. and the other prior art of record.

New claim 53 depending directly from claim 52 is submitted as patentable for the same reasons as claim 52.

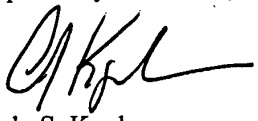
VII. Double Patenting:

The Examiner noted that should claim 25 be found allowable, claim 29 will be objected to under 37 C.F.R. 1.75 as being a substantial duplicate thereof. Applicants respectively point out that claim 25 depends from claim 17 which includes the limitation of a flow restriction device, whereas claim 29 depends directly from claim 1.

VIII. Conclusion:

In view of the foregoing, reconsideration and allowance of claims 1-37 and 42-51 as amended and consideration and allowance of new claims 52-53 are respectfully requested. If the Examiner feels that a telephone conference would in any way expedite prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8695.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE APPLICATION

IN THE SPECIFICATION:

The paragraph starting on page 10, line 17 was amended as follows:

The reactor vessel includes an inlet port 70 in fluid communication with the pressure chamber 26 (Figs. 2 and 6). A quick release fitting 72 is preferably coupled to the inlet port 70 for attaching the port to a flexible hose or rigid tube (not shown) connected to a pressure supply device. The flexible hose or rigid gas supply tube may also be left connected and the fill valve open during an experiment. If a vacuum is to be applied to the chamber 26, a vacuum supply device may also be attached to the pressure port 70 or another inlet port on the reactor vessel. A fill valve 74 is attached to the inlet port to control the application of pressure to the vessel. The fill valve 74 may have a manual or electronic pressure control valve. A pressure sensor (not shown) may be inserted inline with the fill valve 74 or inserted into the pressure chamber 26 or one or more of the reaction wells 30 to monitor the pressure within the vessel. The inlet supply system may allow for a series of purging, venting, or pressurization cycles, with one or more gases or with vacuum without disconnecting the supply lines. The pressure source may be an inert gas such as nitrogen, argon, helium, carbon dioxide, or air, or a reactive gas such as hydrogen, oxygen, hydrogen [choride] chloride, or ammonia. Mixtures of gases may also be used. The reactor vessel further includes an opening for a pressure release valve 78 to prevent over pressurization of the vessel.

The Abstract of the Disclosure was amended as follows:

An apparatus for use in parallel reaction of materials is disclosed. The apparatus includes a base having a plurality of reaction wells, each of the reaction wells having a closed lower end and open upper end for receiving reactant materials. A cover is configured for sealing engagement with the base to form a housing enclosing the plurality of reaction wells and defining a common pressure chamber in communication with the reaction wells. The apparatus further includes an inlet port in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the reaction wells. The housing is configured to sustain a pressure substantially above atmospheric pressure.

IN THE CLAIMS:

Claim 1 was amended as follows:

Claim 1 (amended). An apparatus for use in parallel reaction of materials, comprising:

a base having a plurality of reaction wells formed in an upper surface of the base and extending partially therethrough [therein], each of said reaction wells having a closed lower end defined by the base and an open upper end for receiving components for the reaction;

a cover configured for sealing engagement with the base to form a housing enclosing said plurality of reaction wells and defining a common pressure chamber in communication with said plurality of reaction wells; and

an inlet port in communication with said pressure chamber for supplying pressurized fluid to said chamber to pressurize said plurality of reaction wells;

wherein the housing is configured to sustain a pressure substantially above atmospheric pressure.

New claims 52 and 53 have been added.

Claim 52 (new). An apparatus for use in parallel reaction of materials, comprising:

a base having a plurality of reaction wells formed therein, each of said reaction wells having a permanently closed lower end and an open upper end for receiving components for the reaction;

a cover configured for sealing engagement with the base to form a housing enclosing said plurality of reaction wells and defining a common pressure chamber in communication with said plurality of reaction wells; and

an inlet port in communication with said pressure chamber for supplying pressurized fluid to said chamber to pressurize said plurality of reaction wells;

wherein the housing is configured to sustain a pressure above 40 psig.

Claim 53 (new). The apparatus of claim 52 further comprising a plurality of vials inserted into said plurality of reaction wells for receiving reaction components.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

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Prior U.S. Application(s)

(Application No.)	(Filing Date)	(Status - patented, pending, abandoned)
(Application No.)	(Filing Date)	(Status - patented, pending, abandoned)

And I hereby appoint the law firm of Ritter, Van Pelt & Yi LLP, including **Michael J. Ritter (Reg. No. 36,653); Lee Van Pelt (Reg. No. 38,352); Susan C. Yi (Reg. No. 39,883); Dan H. Lang (Reg. No. 38,531); Cindy S. Kaplan (Reg. No. 40,043); William J. James (Reg. No. 40,661); and Joanne Yoshimura (Reg. No. 45,247); and also Paul Stone (Reg. No. 38,628); and Ronald A. Krasnow (Reg. 33,321)** as my principal attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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